

IN THE SPECIFICATION:

Please make the following changes:

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Referring now also to Figs. 2 and 3, the refrigerator 14 includes a refrigerated compartment 200, a compressor 202, a freezer compartment 204, an evaporator 206, temperature control dials 208, a compartment light 210, a door 212, and a latch 214, and various sensors 216-220 for monitoring and controlling the operations of the refrigerator. A current sensor 216 measures the current drawn by the refrigerator, one or more temperature sensors 217 measure the temperatures of the compartments and, as appropriate, ambient temperature, an open-door sensor 218 detects when the door 212 is not latched, on-off sensors 219 sense the on and off states of the compressor 202, the evaporator 206 and the light 210, and a temperature control sensor 220 senses the user-selected temperature settings. The sensors provide functional data over a bus 222 to a RAM 224 that is included in the memory 35 of the monitoring subsystem 32. The RAM 224 may be any form of non-volatile memory[, such as an EE PROM].

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Referring now to Fig. 5, the adaptor 34 associated with the freezer 22 continuously monitors levels of voltage, current, power, and current-voltage phase displacement over time for each operating cycle (step 500). The adapter then analyses the data and compares the energy consumption patterns associated with the most recent operating cycle with expected

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patterns or with the patterns associated with past operating cycles (step 502). The adapter can determine when, for example, a compressor (not shown) turns on and off by the associated changes in the energy consumption patterns. The adapter can thus determine if the current compressor duty cycle differs from the expected or past duty cycles.

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Based on the results of the analysis, the adapter 34 produces appropriate alarm and warning messages (steps 506-[512]514). While the adapter may have access to less overall functional data than the built-in subsystem 32, the data available to the adaptor is generally sufficient to determine when the associated appliance is operating poorly or when certain key components have failed. The adaptor may not, however, be able to determine the causes of the malfunctions. The adaptor also produces historical and statistical data, in the form of various data points from plots of associated energy consumption variables versus time, and sends the data to the remote center for further analysis.
